

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

**UNITED STATES PATENT AND TRADEMARK OFFICE**

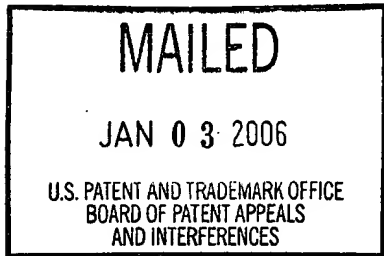
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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Ex parte WILLIAM BRICKER CHAMBERLIN III and JOHN KENT PUDELSKI

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Appeal No. 2005-1816  
Application No. 09/727,622

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ON BRIEF

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Before FRANKFORT, NASE, and BAHR, Administrative Patent Judges.  
BAHR, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1, 3-9 and 13-41. Claims 2, 10-12 and 42-44, the only other claims pending in this application, stand withdrawn from consideration as not being directed to elected species.

We AFFIRM.

### BACKGROUND

The appellants' invention relates to a method of operating a camless internal combustion engine that includes lubricating the engine using a low-phosphorus or phosphorus-free lubricating oil composition in order to "provide an engine and a lubricant system for that engine that adequately addresses the antiwear protection needs of the engine and yet reduces or avoids damage to the exhaust gas aftertreatment device" (specification, page 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

### ***The Applied Prior Art***

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

|                      |           |               |
|----------------------|-----------|---------------|
| Schechter            | 5,456,222 | Oct. 10, 1995 |
| Manka et al. (Manka) | 5,834,407 | Nov. 10, 1998 |

### ***The Rejection***

Claims 1, 3-9 and 13-41 stand rejected under 35 U.S.C. § 103 as being unpatentable over Schechter in view of Manka.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the final rejection (mailed January 7, 2004) and answer (mailed August 6, 2004) for the

examiner's complete reasoning in support of the rejection, and to the brief (filed May 26, 2004) and reply brief (filed August 30, 2004) for the appellants' arguments thereagainst.

### OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

Schechter discloses spool valve control of an electrohydraulic camless valvetrain of an internal combustion engine. As explained by Schechter in column 1, lines 28-42, the use of electrohydraulic control for engine intake and exhaust valves permits greater flexibility in engine valve control than is possible with conventional cam-driven valvetrains, thereby permitting various engine operating conditions to be accounted for through independent control of the engine valves in order to optimize engine performance. Schechter is silent with respect to the use of lubricating fluids for the valvetrain.

Manka discloses lubricants and functional fluids containing heterocyclic compounds characterized by enhanced antiwear properties. Manka teaches that engine lubricants require the presence of additives to protect the engine from wear and explains that the principal antiwear additive used for almost 40 years, zinc

dithiophosphate (ZDDP), is typically used in the lubricating oil at a sufficient concentration to provide a phosphorus content of 0.12% by weight or higher in order to pass industry standard tests for antiwear. Recognizing that phosphates may result in the deactivation of emission control catalysts used in automotive exhaust systems and that, consequently, a reduction in the amount of phosphorus-containing additives (e.g., ZDDP) would be desirable, Manka sought to reduce the amount of phosphorus-containing additive in the oil and yet still provide the desired antiwear properties. Manka provides a solution to this problem by providing compositions that can function as either a partial or complete replacement for ZDDP. See column 1, lines 12-30. In one embodiment of Manka's invention, such lubricating compositions and functional fluids have a phosphorus content up to about 0.08% by weight and, in another embodiment, up to about 0.05% by weight (column 28, penultimate paragraph). Manka does not specifically mention use of the inventive lubricating compositions and functional fluids with camless valvetrains but does teach that

[t]he lubricating compositions may be lubricating oils and greases useful in industrial applications and in automotive engines, transmissions and axles. These lubricating compositions are effective in a variety of applications including crankcase lubricating oils for spark-ignited and compression-ignited internal combustion engines, including automobile and truck engines, two-cycle engines, aviation piston engines, marine and low-load diesel engines, and the like [column 27, lines 12-20].

In finally rejecting claims 1, 3-9 and 13-41, the examiner contends that it would have been obvious to one of ordinary skill in the art "to use the low-phosphorus lubricating oil composition [taught by Manka] on the camless engine [of Schechter] to reduce wear and exhaust gas emissions because of the low amount of phosphorus" (final rejection, pages 2-3). The appellants argue that the examiner's rejection should be reversed because the references applied by the examiner fail to provide support for the examiner's stated motivation to combine and evidence of a reasonable probability of success and thus fail to establish a *prima facie* case of obviousness of the claimed subject matter.

As to the motivation to combine, Schechter would have taught one of ordinary skill in the art at the time of the appellants' invention the advantage, namely, increased flexibility in engine valve control, of using a camless valvetrain of an internal combustion engine over conventional cam-driven valvetrains but is silent with respect to the particular lubricant used in such camless valvetrain, leaving the skilled artisan to select an appropriate lubricant. Such a skilled artisan would further have been motivated by Manka's teachings in the second paragraph of column 1 to select for use with a camless valvetrain of the type taught by Schechter one of Manka's low phosphorus-content lubricants, in particular the embodiments having the lowest phosphorus contents, such as those having phosphorus contents up to about 0.05% or 0.08% by weight, containing compositions that can function as either partial or complete

replacement for ZDDP, in order to reduce the amount of phosphorus-containing additives while still providing the desired antiwear properties, so as to arrive at the subject matter of appellants' claim 1.

Obviousness does not require absolute predictability. Only a reasonable expectation that the beneficial result will be achieved is necessary to show obviousness. In re Merck & Co., Inc., 800 F.2d 1091, 1097, 231 USPQ 375, 379 (Fed. Cir. 1986). Manka teaches that the inventive lubricating compositions are effective in a variety of applications including crankcase oils for spark-ignited and compression-ignited internal combustion engines (column 27, lines 14-17). These teachings provide no indication whatsoever that they are limited to internal combustion engines having cam-driven valvetrains. In accordance with those teachings, one of ordinary skill in the art would have had a reasonable expectation of success in using the low phosphorus-content lubricating oils of Manka with an internal combustion engine having a camless valvetrain for increased flexibility in engine valve control as taught by Schechter in order to achieve the emission control related advantages of phosphorus reduction while maintaining the desired antiwear properties.

In light of the above, the rejection of claim 1 as being unpatentable over Schechter in view of Manka is sustained. The appellants have not argued separately the patentability of claims 3-9 and 13-41 apart from claim 1, thereby allowing these claims to stand or fall with claim 1 (see In re Young, 927 F.2d 588, 590, 18 USPQ2d

1089, 1091 (Fed. Cir. 1991); In re Wood, 582 F.2d 638, 642, 199 USPQ 137, 140 (CCPA 1978)). It thus follows that the like rejection of claims 3-9 and 13-41 is also sustained.

#### CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 3-9 and 13-41 under 35 U.S.C. § 103 is AFFIRMED.

No time period for taking any subsequent action in connection with this appeal  
may be extended under 37 CFR § 1.136(a).

AFFIRMED



CHARLES E. FRANKFORT  
Administrative Patent Judge



JEFFREY V. NASE  
Administrative Patent Judge



JENNIFER D. BAHR  
Administrative Patent Judge

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